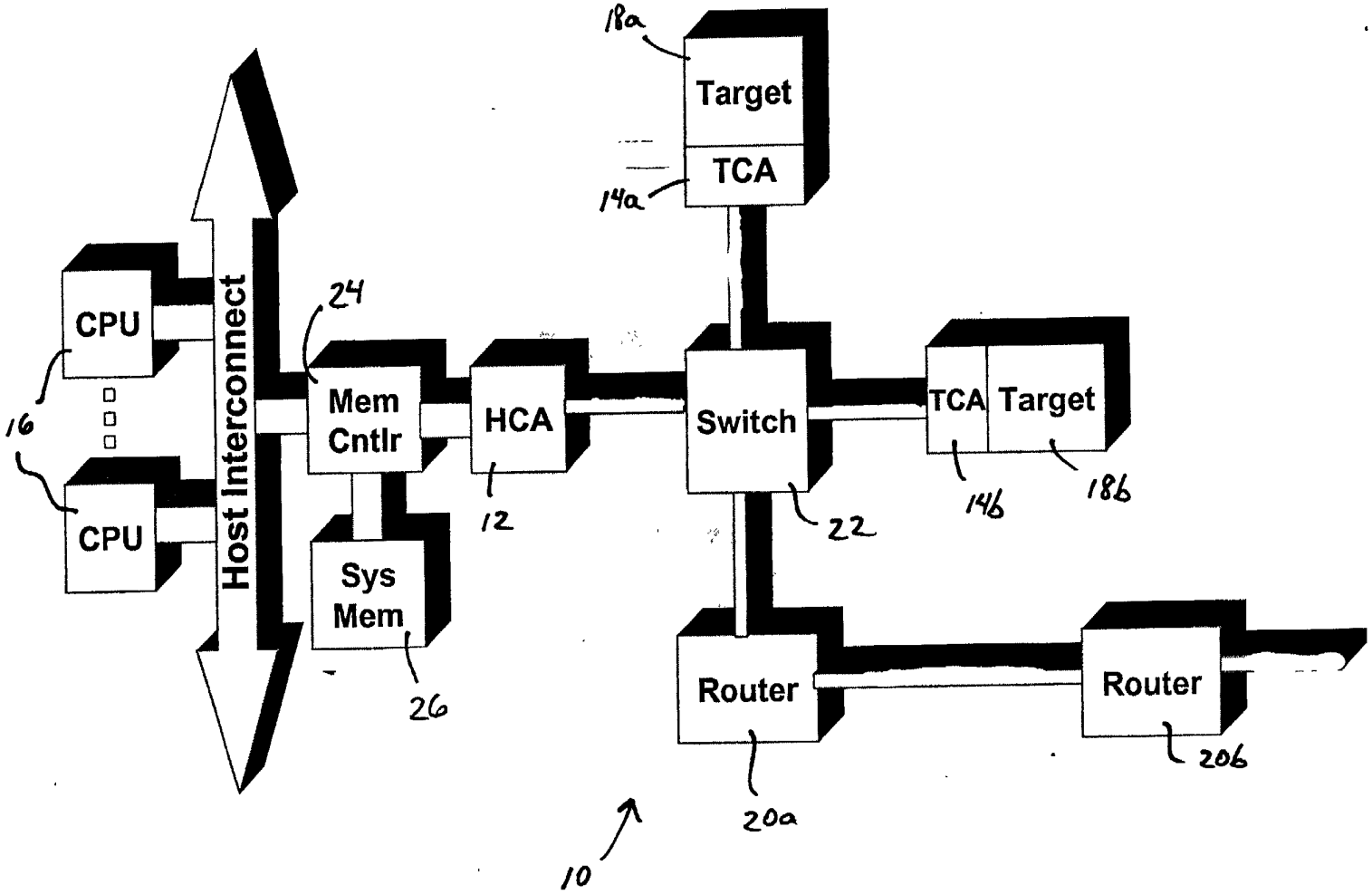
FOSTER 08050660

Figure 1
(Prior Art)



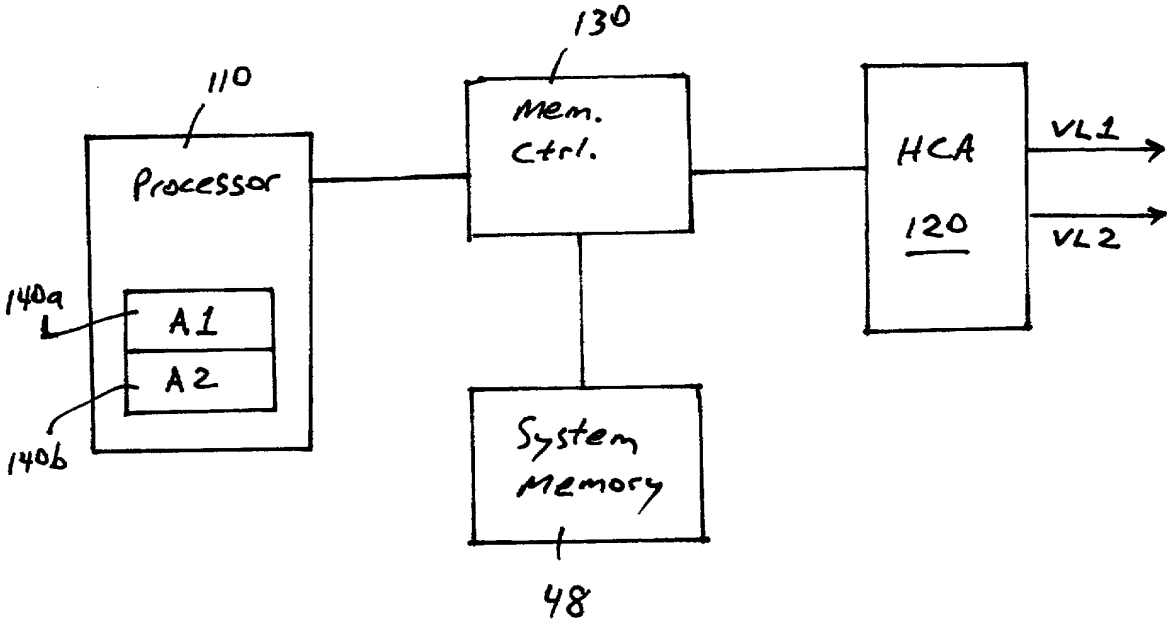

130
110
Mem.
Ctrl.
Processor
HCA
120
VL1
VL2
140a
A1
A2
140b
System
Memory
48

Figure 2

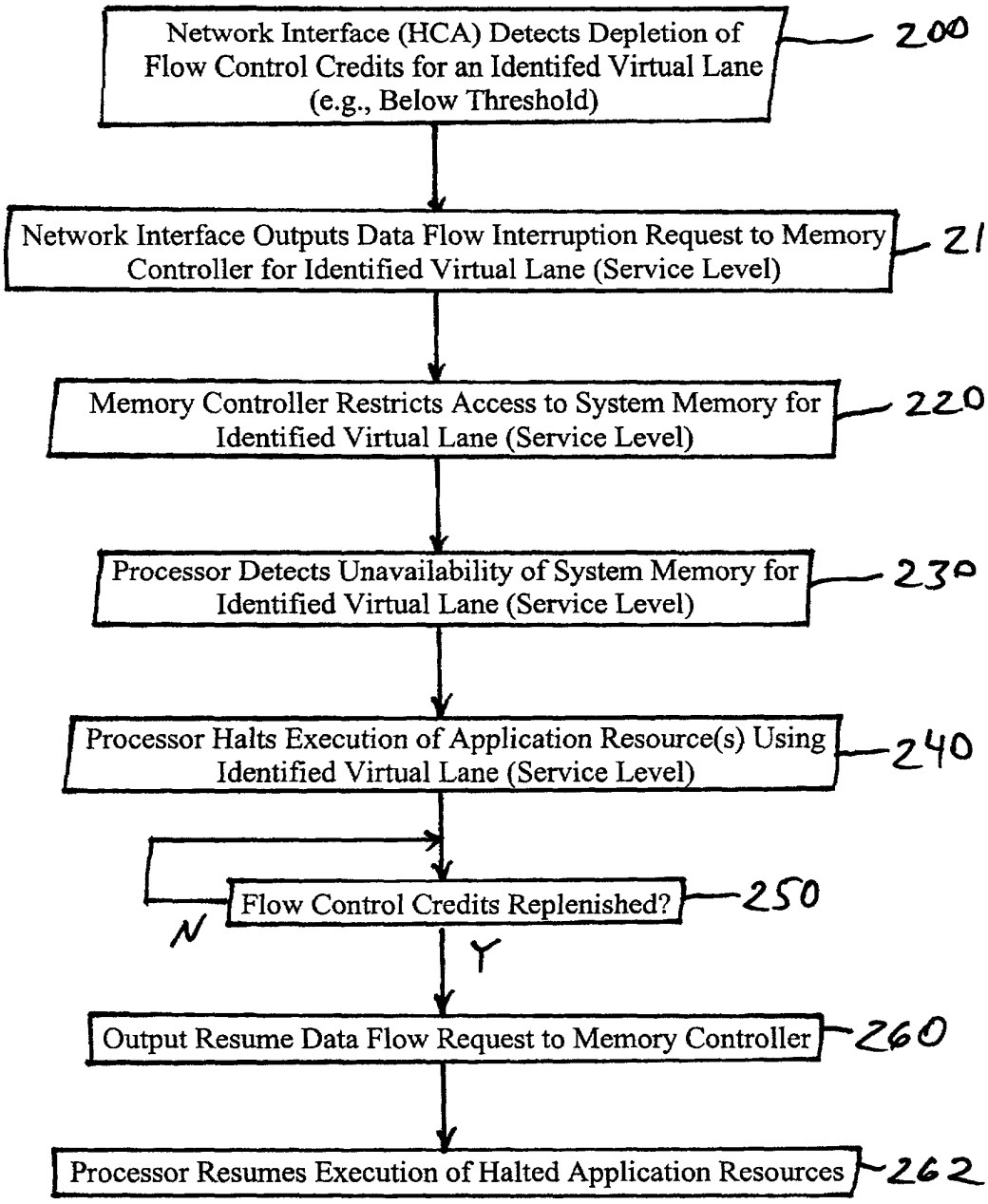

Network Interface (HCA) Detects Depletion of Flow Control Credits for an Identifed Virtual Lane (e.g., Below Threshold)
200
Network Interface Outputs Data Flow Interruption Request to Memory Controller for Identified Virtual Lane (Service Level)
210
Memory Controller Restricts Access to System Memory for Identified Virtual Lane (Service Level)
220
Processor Detects Unavailability of System Memory for Identified Virtual Lane (Service Level)
230
Processor Halts Execution of Application Resource(s) Using Identified Virtual Lane (Service Level)
240
Flow Control Credits Replenished?
250
N
Y
Output Resume Data Flow Request to Memory Controller
260
Processor Resumes Execution of Halted Application Resources
262

Figure 3

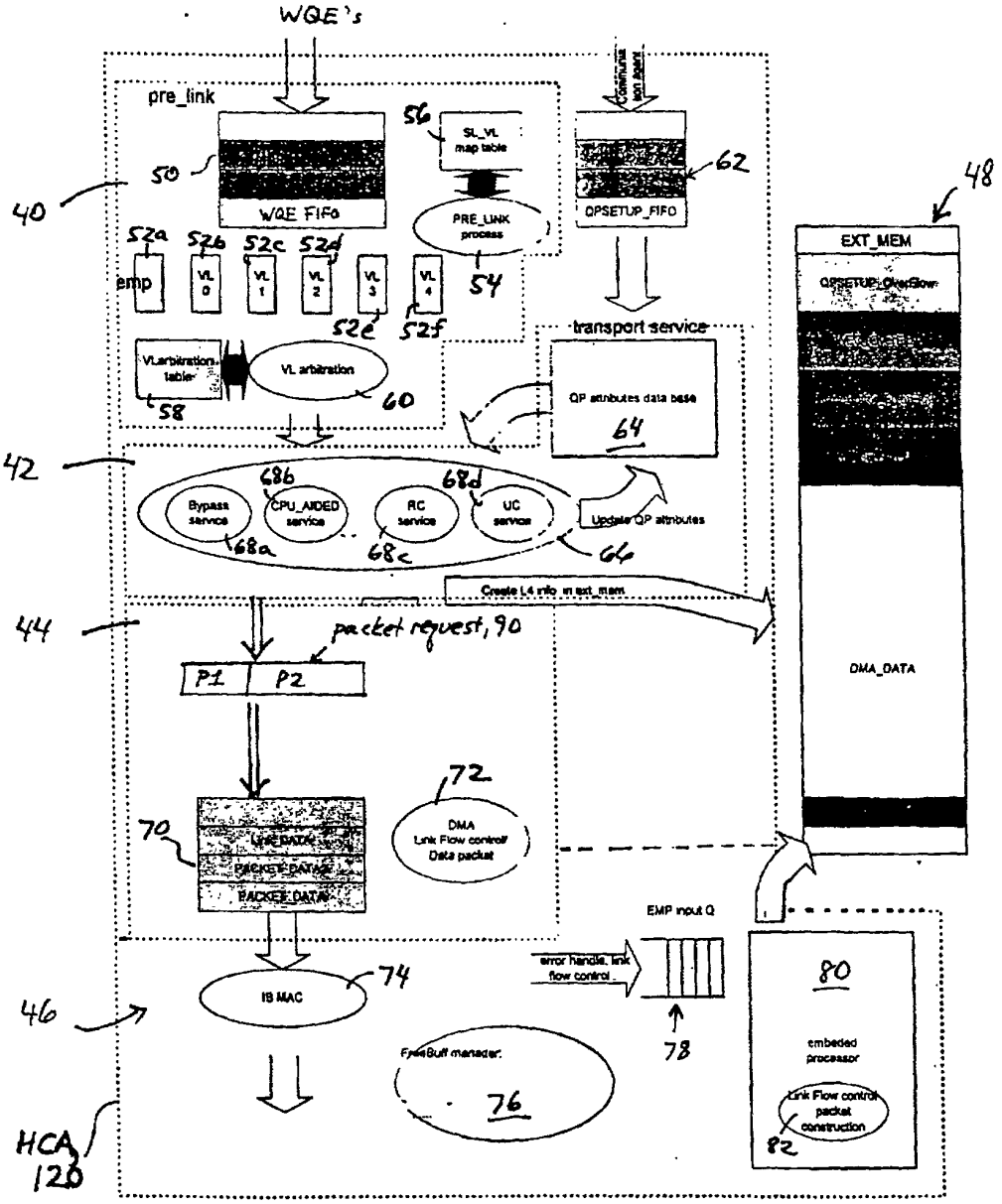

WQE's
pre_link
40
50
WQE FIFO
56
SL_VL map table
PRE_LINK process
54
52a
52b
52c
52d
52e
52f
emp
VL 0
VL 1
VL 2
VL 3
VL 4
VL arbitration table
58
VL arbitration
60
42
transport service
QP attributes data base
64
62
QPSETUP_FIFO
48
EXT_MEM
QPSETUP_OverFlow
DMA_DATA
68b
68d
Bypass service
CPU_AIDED service
RC service
UC service
68a
68c
66
Update QP attributes
Create L4 info in ext_mem
44
packet request, 90
P1
P2
70
72
DMA
Link Flow control
Data packet
EMP input Q
error handle, link flow control
78
80
embeded processor
Link Flow control packet construction
82
46
IB MAC
74
FreeBuff manager
76
HCA
120

Figure 4